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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,315	02/09/2005	Bernard A. McNulty	03-497	6460
34704 7590 12/05/2008 BACHMAN & LAPOINTE, P.C. 900 CHAPEL STREET SUITE 1201 NEW HAVEN, CT 06510				
EXAMINER				
WEIER, ANTHONY J				
ART UNIT		PAPER NUMBER		
1794				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/524,315

**Applicant(s)**

MCNULTY, BERNARD A.

**Examiner**

Anthony Weier

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 4/3/08
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's arguments regarding the restriction requirement are persuasive, and said requirement has been withdrawn. Claims 1-24 will all be examined.

### ***Claim Rejections - 35 USC § 112, 2nd***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-11, 23, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-11, 23, and 24 are indefinite in that it is not clear as to what is meant by the terminology "TM-like" or "TE-like". In other words, it can not be discerned as to why the modes are not strictly TM or TE. As such, the scope of these claim is not clear.

In claim 8, it is not clear as to what "diameter" is being referred to. The diameter of the cavity? Or another unspecified diameter value?

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 7, 8, 11, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by WO 01/33978 (Lanier et al).

Lanier et al discloses an apparatus for heat treating a biomaterial using at least one cylindrical microwave cavity wherein same is shown for heating packaged liquid material and, therefore, would be capable of treating inshell egg (see Figures 1a, 2b, 2c; page 8, lines 3-18; page 11, line 25 – page 12, line 2). In addition, Lanier et al discloses the use of conveyors to transport material through the microwave cavities (page 13, line 26 – page 14, line 9). Lanier et al further discloses the cavity being positioned longitudinally (i.e. cylindrical) wherein said cavity has a length which is inherently less than countless diameter values (see Figures 1a, 1b).

5. Claims 7, 8, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Skubich (U.S. Patent No. 4896005).

Skubich discloses an apparatus comprising a conveyor system which carries packaged articles to be pasteurized through a round treatment chamber employing microwave feed (Fig. 1; col. 2, lines 48-57) wherein said apparatus would be capable of treating shelled eggs (a naturally formed, packaged food article) and heating the contents therein at a temperature commensurate with

pasteurizing the articles therein. Skubich further discloses the cavity being positioned longitudinally (i.e. cylindrical) wherein said cavity has a length which is inherently less than countless diameter values.

6. Claims 7-9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Tran (U.S. Patent No. 4631380).

Tran discloses an apparatus comprising a conveyor system which carries foods to be pasteurized through a round treatment chamber employing microwave feed (Figs 3 and 4) wherein said apparatus would be capable of treating shelled eggs and heating the contents therein at a temperature commensurate with sterilizing same (col. 6, lines 4-11). Tran further discloses the cavity being positioned longitudinally (i.e. cylindrical) wherein said cavity has a length which is inherently less than countless diameter values, said cavity having first and second walls with associated apertures for the flow of the treated material (Fig. 3), said cavity having inlet and outlet waveguides as called for in the instant claims (e.g. col. 1, lines 61-68; Figure 3).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/33978 (Lanier et al).

The claims further call for pre-cooling means. Although Lanier et al is not specific about cooling means prior to the microwave treatment, it should be noted that it is notoriously well known to cool food products prone to harbor harmful bacteria in order to reduce the multiplication of same and slow pending changes in the functionality, taste, texture, color, etc. of the egg product until the product is transferred to a location for pasteurization. In other words, it would have been further obvious to have maintained the eggs in a chilled state from the farm to the point of pasteurizing to minimize these ill-effects otherwise expected.

Claim 16 calls for the precooling to be effected to such degree to produce a 2 log kill of salmonella in the albumen. However, such determination would have been well within the purview of one skilled in the art, and it would have been further obvious to have arrived at such amount through routine experimental optimization.

9. Claims 1-6, 9, and 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/33978 (Lanier et al) taken together with Davidson (U.S. Patent No. 6632464).

Lanier et al discloses an apparatus and method for heat treating a biomaterial using, for example, two separate cylindrical microwave cavities each having different heating capabilities (see Figures 1a, 1b; page 8, lines 3-18; page 11, line 25 – page 12, line 2). Examples of such heating capabilities including concentrated heating in the center of the biomaterial or in other selected areas of same (e.g. TM and TE modes; see page 12, lines 3-24). In addition, Lanier et al discloses the use of conveyors to transport material through the microwave

cavities (page 13, line 26 – page 14, line 9) and microwave cavities comprising endwalls with apertures (see Figs. 1a and 1b).

Although Lanier et al discloses the treatment of egg (e.g. page 10, line 2) but is silent regarding the treatment of inshell egg, Lanier et al also discloses treatment of packaged food material for the purpose of pasteurization (e.g. page 7, line 27 - page 8, line 2). Clearly, inshell egg is a naturally packaged food material, and it would have been obvious to one having ordinary skill in the art at the time of the invention to have applied the teachings of Lanier et al to inshell egg as same is a form of packaged food.

Although providing the alternatives of treating the biomaterial in different manners, Lanier et al does not specifically articulate the combination of TM and TE modes in said consecutive microwave cavities. However, absent a showing of unexpected results, it would have been obvious to one having ordinary skill in the art at the time of the invention to have employed differing consecutive microwave heating modes as a matter of preference depending on the particular areas of the food desired for heating. With regard to the treatment of inshell egg, in particular, as required in the method claims, it has long been known that the yolk and egg white of the inshell egg require different heating treatments to provide a desired microbial kill without coagulating either the yolk or the egg white as taught, for example, in Davidson. In addition, Davidson teaches that eggs may be pasteurized by a variety of heating means including by microwave (col. 6, lines 2-37). One skilled in the art recognizing the difficulty in pasteurizing to a particular degree both yolk and egg white still in the shell as taught, for

example, by Davidson would also recognize, therefore, that microwave treatment may generally be employed for such treatment. Lanier et al provides further direction as to how one might heat different select areas of food articles (page 12, lines 3-24). Since egg yolk and egg white occupy distinct areas within the shell of an egg, one skilled in the art at the time of the invention would turn to the direction of Lanier et al for providing separate heat treatments of the different parts of the egg to achieve the particular degree of pasteurization without the onset of coagulation in a manner which does not require the messier hot water treatment and limited temperature/time range used in Davidson.

The claims further call for the particular form of waveguide used and the apertures of the cavity endwalls are centrally located. However, such determination would have been well within the purview of a skilled artisan, and it would have been further obvious to have arrived at the particular waveguides as a matter of preference depending on the particular apparatus readily available and/or cost considerations. As for the position of the apertures, it would have been further obvious to have arrived at such location through routine experimental optimization.

The claims further call for the attainment of a particular level of microbial kill in at least one of the yolk or egg white as well as the particular temperatures employed with respect to both the yolk and egg white. Such determinations would have been well within the purview of a skilled artisan, and it would have been further obvious to have arrived at same through routine experimental optimization.



The claims further call for rotating or spinning the inshell eggs. It is notoriously well known to rotate food articles during microwave heating to provide more uniform heating. It would have been further obvious to have employed such well known feature in the process/apparatus of Lanier et al for such advantage.

The claims further call for adjusting the parameters of at least one of the microwave heating steps based on measuring the masses of the yolk and albumen in the eggs. However, the such processing is notoriously well known in the engineering art, particularly when the process is to be conducted continuously. By measuring the weight of the yolk and albumen, the appropriate amount of heating may be achieved such that the heating of all of the eggs treated is uniform. It would have been further obvious to have included such well known feedback information in the process of Lanier et al such that the same relative treatment (in the instant case, pasteurization) is conducted for each egg product passing through.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/33978 (Lanier et al) taken together with Davidson (U.S. Patent No. 6632464) and Cox et al (U.S. Patent No. 5939118).

Lanier et al further discloses additional pre-treatment steps in conjunction with said microwaving steps wherein said additional steps include heating by conduction which would necessarily include apparatus that achieves same (e.g. page 15, lines 15-24). The claims further call for the presence of a cryogenic chiller. It is well known to cool eggs following pasteurization as taught,

for example, by Cox et al (col. 13, line 65 - col. 14, line 12), and it would have been obvious to one having ordinary skill in the art at the time of the invention to have incorporated such cooling step to ensure that any remaining viable harmful bacteria are not allowed to multiply. Although Cox et al is silent regarding the use of a cryogenic chiller to facilitate such cooling, such device is notoriously well known, and it would have been further obvious to have incorporated same as a matter of preference depending on, for example, the particular degree of cooling desired, the cost of cooling equipment, and the cooling equipment which is readily available.

#### ***Prior Art***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Weier whose telephone number is 571-272-1409. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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November 22, 2008